

REMARKS

Claims 1-43 are all the claims pending in the application.

Applicant thanks the Examiner for acknowledging the claim to foreign priority and for confirming that the certified copy of the priority document was received.

I. Drawings

The Examiner has objected to the drawings for the reason set forth at page 2 of the Office Action. Applicant submits herewith a proposed drawing correction which addresses the Examiner's objection. Accordingly, Applicant respectfully requests that the Examiner approve this proposed drawing correction and indicate such approval in the next Office paper.

II. Specification

The Examiner objects to the specification by asserting that the title of the invention is not descriptive. Applicant hereby amends the title in a manner believed to overcome this objection. Accordingly, Applicant respectfully requests that the objection be withdrawn.

III. Claim Rejections under 35 U.S.C. § 112, second paragraph

Claims 15, 16, 21, 22 and 41-43 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

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Regarding claims 15, 16, 21, 22, Applicant submits that these claims have been amended in a non-narrowing manner to more clearly define the invention. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection.

Regarding claims 41-43, the Examiner asserts that the phrases “said electrodes” and “said insulating film” lack proper antecedent basis. Applicant respectfully disagrees.

Claim 41, lines 3-4, recites “burying the fourth insulating film between electrodes...” Therefore, Applicant submits that the phrase “said electrodes” in claim 41 has proper antecedent basis. Likewise, claim 41, line 6, recites “depositing an insulating film...” Therefore, Applicant submits that the phrase “said insulating film” in claim 41 also has proper antecedent basis. Claims 42 and 43 recite the same limitations as claim 41 and thus the phrases “said electrodes” and “said insulating film” also have proper antecedent basis.

Based on the foregoing, the Examiner is respectfully requested to reconsider and withdraw the 35 U.S.C. § 112, second paragraph rejection.

IV. Claim Rejections under 35 U.S.C. § 102(a)

Claims 1-6, 8, 11, 12, 15, 16, 19, 20, 25, 26, 29, 31 and 33-40 stand rejected under 35 U.S.C. § 102(a) as being anticipated by Applicant’s admitted prior art. Applicant respectfully traverses this rejection on the following basis.

Claim 1 defines a novel combination of features which forms a solid-state image pickup device. Included among the features is a device in a peripheral circuit region which is isolated

from another device by means of an isolating electrode. Applicant submits that the claimed combination, including at least this feature, is neither disclosed nor suggested by the admitted prior art.

In an illustrative embodiment of the present invention, an isolating electrode isolates an active region by isolating two devices. On the other hand, in the admitted prior art, an active region is isolated by means of the local oxidation of silicon (LOCOS) method. As shown in Fig. 1, the combination of the very thick field oxide film 614 and the p⁺ region 602 performs this isolation.

The Examiner asserts that the gate electrode 637 as shown in Fig.1 corresponds to the isolating electrode as claimed. Applicant respectfully disagrees and submits that the Examiner is mischaracterizing the admitted prior art. Contrary to the assertion of the Examiner, gate electrode 637 is not utilized to isolate two devices, as is required by claim 1.

Rather, as is well known in the art, a gate electrode is an electrode whose voltage controls the current flowing through a channel of the device. By applying a variable voltage to a gate electrode, a device can be turned on and off. Accordingly, Applicant respectfully submits that gate electrode 637 does not correspond to the isolating electrode as claimed. That is, gate electrode 637 in no way operates so as to isolate two devices, as is required by claim 1. Indeed, the admitted prior art does not even remotely suggest such a capability.

Based on the foregoing, Applicant submits that the admitted prior art fails to disclose or suggest all of the features of claim 1 and, therefore, respectfully requests that the Examiner reconsider and withdraw the rejection. Claims 2-6, 8, 11, 12, 15, 16, 19, 20, 25 and 26 depend

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from claim 1 and therefore incorporate all of the features thereof. Accordingly, Applicant submits that claims 2-6, 8, 11, 12, 15, 16, 19, 20, 25 and 26 are patentable at least by virtue of their dependency.

Applicant submits that independent claim 29 is patentable for at least the same reasons as discussed above regarding claim 1. Namely, the admitted prior art fails to disclose or suggest a first diffusion layer for isolating a device from another in a solid-state image pickup region and a second diffusion layer for isolating a device from another in the peripheral circuit region.

Claims 31 and 33-40 depend from independent claim 29 and therefore incorporate all of the features thereof. Accordingly, Applicant submits that claims 31 and 33-40 are patentable at least by virtue of their dependency.

V. Claim Rejections under 35 U.S.C. § 103(a)

A. Claims 7, 9, 10, 13, 14, 17, 18, 21, 22, 30 and 32 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA). Applicant respectfully traverses this rejection on the following basis.

Claims 7, 9, 10, 13, 14, 17, 18, 21 and 22 depend from independent claim 1. Claims 30 and 32 depend from independent claim 29. Accordingly, Applicants submits that these claims are patentable at least by virtue of their dependency.

In addition, claim 7 recites the feature of the third insulating film being thinner than the first insulating film, and the second insulating film being thicker than the first insulating film.

The Examiner recognizes that Applicant's Admitted Prior Art does not disclose or suggest such a combination of features.

Nonetheless, in a conclusory manner, the Examiner asserts that the particular thickness configuration of the insulating layers is a matter of design choice and that it would have been obvious to provide thinner layers with respect to thicker layers as claimed in order to save material and reduce costs. Applicant respectfully submits that this proffered motivation for modifying the admitted prior art is conclusory and wholly unsupported by the prior art.

It is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988, emphasis added). Even when obviousness is based on a single prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference. *In re Kotzab*, 55 USPQ2d at 1316-1317; *see also* MPEP § 2142 (*quoting Ex parte Clapp*, 227 USPQ 972, 973 (B. Pat. App. & Inter. 1985)) ("To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.").

Here, the motivation proffered by the Examiner for modifying the admitted prior art to arrive at the claimed invention is simply not convincing. Trying to "reduce costs" is a goal pursued in every single solid-state image pickup design but does not provide a reasonable explanation as to why a skilled artisan would have been motivated to modify the admitted prior art and arrive at the specific thickness configuration of insulating films as recited in claim 7.

Indeed, nothing in the admitted prior art even remotely suggests that the claimed thickness configuration would have been desirable.

Furthermore, the Federal Circuit has held that a claimed invention should not be rejected as a mere "design choice" when the Applicant presents evidence of the technical advantages of the Applicant's structure. *See In re Chu*, 66 F.3d 292, 36 USPQ2d 1089 (Fed. Cir. 1995). Here, Applicant's disclosure identifies the operational benefits obtained from the particular thickness configuration of the insulating layers. In particular, by providing the thickness configuration as recited in claim 7, a greater drive capability for the peripheral circuit transistor is produced (Applicant's Specification, page 17, lines 2-11).

Therefore, because the claimed thickness configuration confers unexpected advantages over the thickness configuration disclosed by the admitted prior art, Applicant respectfully submits that the particular thickness configuration of insulating films recited in claim 7 would not have been a simple matter of design choice.

The Examiner's rationale behind modifying the thickness configuration of the insulating layers of the admitted prior art amounts to a *per se* rule that any possible thickness configuration for a given number of layers is simply a matter of design choice.

The United States Court of Appeals for the Federal Circuit has expressly stated that all *per se* rules of obviousness are legally invalid and that the obviousness analysis must be based on the prior art:

The use of *per se* rules, while undoubtedly less laborious than a searching comparison of the claimed invention--including all its

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limitations--with the teachings of the prior art, flouts section 103 and the fundamental case law applying it. Per se rules that eliminate the need for fact-specific analysis of claims and prior art may be administratively convenient for PTO examiners and the Board. Indeed, they have been sanctioned by the Board as well. But reliance on per se rules of obviousness is legally incorrect and must cease. Any such administrative convenience is simply inconsistent with section 103, which, according to Graham and its progeny, entitles an applicant to issuance of an otherwise proper patent unless the PTO establishes that the invention as claimed in the application is obvious over cited prior art, based on the specific comparison of that prior art with claim limitations. (Emphasis added)

In re Ochiai, 71 F.3d 1565, 1572, 37 U.S.P.Q.2D (BNA) 1127, 1134 (Fed. Cir. 1995).

The critical inquiry is whether there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the claimed structure. *In re Newell*, 13 U.S.P.Q.2d 1248, 1250 (Fed. Cir. 1989). Applicant respectfully submits that the Office Action does not cite to any evidence in the prior art that suggests the claimed thickness configuration.

Accordingly, if the Examiner maintains the present rejection, Applicant respectfully requests the Examiner to identify relevant prior art which meets the requirements of the claims instead of mere assertions as to what would have been an obvious design choice.

B. Claims 23 and 24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Takeda et al. (U.S. Patent No. 5,591,963).

Claims 23 and 24 ultimately depend from independent claim 1. Applicant submits that the deficiencies discussed above regarding AAPA are not overcome by Takeda. Accordingly, Applicant submits that claims 23 and 24 are patentable at least by virtue of their dependency.

C. Claims 27 and 28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Sasaki et al. (JP 03-174772).

Claims 27 and 28 ultimately depend from independent claim 1. Applicant submits that the deficiencies discussed above regarding AAPA are not overcome by Sakai. Accordingly, Applicant submits that claims 27 and 28 are patentable at least by virtue of their dependency.

VI. Allowable Subject Matter

Applicant would like to thank the Examiner for indicating that claims 41-43 would be allowable if rewritten to overcome the rejection (s) under 35 U.S.C. 112, second paragraph, and to include all of the limitations of the base claim and any intervening claims. Applicant respectfully submits that base claim 29 is patentable for the reasons discussed above. Therefore, Applicant has not rewritten claims 41-43 in independent form at this time.

VII. Conclusion


In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Submitted herewith is a Petition for Extension of Time.

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Applicants hereby petition for any extension of time which may be required to maintain the pendency of this case, and any required fee, except for the Issue Fee, for such extension is to be charged to Deposit Account No. 19-4880.

Respectfully submitted,


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Date: May 22, 2003